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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/701,255

11/03/2003

Hidenobu Ohya

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10/04/2004

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EXAMINER

CULLER, JILL E

ART UNIT

PAPER NUMBER

2854

DATE MAILED: 10/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/701,255

Applicant(s)

OHYA ET AL.

Examiner

Jill E. Culler

Art Unit

2854

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: None of the reference characters in the drawings have been included in the specification, nor are the drawings described in detail as required.

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities: The specification contains numerous grammatical errors. For example, on page 2, lines 17-18, the phrase "are accomplishment to improve" is confusing and should be rewritten for clarification. On page 3, lines 3-4, it appears that the word "describe" should be

“described” and “publication” should be “publications”. On page 3, lines 21-22, the phrase “which recently has spread rapidly” appears to be referring to the printing of the images, but this is not clear from the language. These and similar errors should be addressed throughout the specification.

Claim Objections

3. Claims 1-11 are objected to because of the following informalities:

In claim 1, on line 8, it appears that the words “thickness of the” are missing before “outermost”.

In claim 1, on line 9, it appears that the phrase “before being applied pressure” should be “before applying pressure” instead.

In claim 3, on line 3, the phrase “2:8 to 8:2” is not fully descriptive. It appears that the word “between” may be missing.

In claim 7, on line 2, it appears that the word “absorpive” should be “absorptive” instead.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-8 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,832,984 to Hasegawa et al.

With respect to claim 1, Hasegawa et al. teaches a method of forming an ink-jet image, comprising the steps of: ejecting droplets of an ink onto an ink-jet recording media, see column 14, lines 10-15, which includes a support having thereon an outermost layer containing a thermoplastic resin; see column 4, lines 52-63, and then applying pressure onto the outermost layer with a pressing apparatus, see column 17, lines 37-42. Although Hasegawa et al. does not explicitly teach that a thickness of the outermost layer after applying pressure is 50 to 80% of the thickness of the outermost layer before applying pressure, one having ordinary skill in the art would recognize that this value could be obtained by obvious routine experimentation.

With respect to claims 2-3, Hasegawa et al. teaches the outermost layer further contains a filler wherein a weight ratio of the thermoplastic resin to the filler is 2:8 to 8:2. See column 4, lines 52-56 and column 5, lines 43-46.

With respect to claims 4-5, Hasegawa et al. teaches the ink-jet recording media further contains an ink absorbing layer between the outermost layer and the support and the outermost layer is a porous ink receiving layer. See column 3, lines 24-27. Although Hasegawa et al. does not explicitly teach that a mean void ratio in a combined section of the ink absorbing layer and the outermost layer is from 40 to 70% based on the total volume of the combined section, or a mean void ratio of the outermost layer is 30 to 70% based on the total volume of the outermost layer, one having ordinary skill in

Art Unit: 2854

the art would recognize that these values could be obtained by obvious routine experimentation.

With respect to claim 6, Hasegawa et al. teaches the outermost layer has a thickness of 3 to 15 μm . See column 5, lines 56-59.

With respect to claim 7, Hasegawa et al. teaches the support is non-water absorptive. See column 4, lines 34-40.

With respect to claim 8, Hasegawa et al. teaches pressure applied within a particular range. See column 17, lines 36-42. Although Hasegawa et al. does not explicitly teach that the applied pressure is 0.5 to 10 MPa, one having ordinary skill in the art would recognize that these values could be obtained by obvious routine experimentation.

With respect to claim 10, Hasegawa et al. teaches the method further comprises the step of: applying heat onto the ink-jet recording media prior to the pressure applying step or during the pressure applying step. See column 17, lines 36-42.

With respect to claim 11, Hasegawa et al. teaches the ink contains a pigment. See column 9, lines 49-59.

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hasegawa et al. in view of U.S. PGPUB 2002/0027587 to Sugaya et al.

Hasegawa et al. teaches all that is claimed, as in the above rejection of claims 1-8 and 10-11 except the pressing apparatus has a pressing member which contacts the

outermost layer of the ink-jet recording media, and the pressing member has a surface roughness of not more than 200 nm.

Sugaya et al. teaches a pressing apparatus having a pressing member with a particular surface roughness. See page 19, paragraphs 306-308.

It would have been obvious to one having ordinary skill in the art at the time of the invention to use the pressing apparatus of Sugaya et al. with the method of Hasegawa et al. in order to provide the appropriate treatment of the recording medium after printing. Although Sugaya et al. does not explicitly teach that the pressing member has a surface roughness of not more than 200 nm, one having ordinary skill in the art would recognize that these values could be obtained by routine experimentation and does not appear to require any obviousness.

Conclusion


7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent No. 5,03,382 to Akada et al., U.S. Patent No. 5,146,087 to VanDusen, U.S. Patent No. 5,455,604 to Adams et al., U.S. Patent No. 6,357,871 to Ashida et al., U.S. PGPUB 2003/0160850 to Ohya et al., JP-56077154 to Maekawa et al., JP-01085768 to Takada et al., and JP-11105271 each teach a method of printing having obvious similarities to the claimed subject matter.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jill E. Culler whose telephone number is (571) 272-2159. The examiner can normally be reached on M-Th 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Hirshfeld can be reached on (571) 272-2168. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jec


Daniel J. Colilla
Primary Examiner
Art Unit 2854